

REMARKS

This paper is in response to the Office Action Dec. 10, 2009. As a restriction was issued in this case, the Applicants reserve the right to file a continuation application for the non-elected claims. Reconsideration is respectfully requested in light of the clarifying amendment and remarks. Please enter the amendments presented herein.

In the last Office Action, the Examiner indicated allowability of claims 34-37, pending the last amendment to address a Section 112, Para. 2 rejection. The amendment was made to overcome the Section 112, Para. 2 rejection. However, it appears that the Examiner has reconsidered the allowability and applied a new rejection.

In the new rejection, claims 34-37 were rejected under 35 USC § 103(a) as being obvious over Varma et al. (US 2004/0213419) ("Varma") in view of Cezanne (EP 0 652 686). This rejection is respectfully traversed in light of the presented amendments.

Firstly, the Office had previously used Varma in a Section 103 rejection in the Office Action of March 23, 2009. In the Office Action of May 12, 2009, the Examiner confirmed that the Applicant's reasons over the rejection, using Varma, were persuasive and the rejection was removed. The Applicant understands that the current rejection is a new combination of Varma, in view of Cezanne. However, to illustrate how the combination of Varma and Cezanne do not render the pending claims obvious, the Applicant will first review one significant difference between the teachings of Varma and the presently pending claims.

Varma is concerned with first "*training*" its system with "*noise only*" and then "*voice only*". Paragraphs [0051, 0054]. Once the training is completed and the inputs are saved, one or more filters are constructed, which are used to later remove noise with a particular profile. [0058] Consequently, the Varma teachings are relying on the pre-construction of filters, instead of analyzing any sound as it is detected during use of the controller. As claimed, the processing is done on the audio signal, by analysis of the audio signal itself, instead of applying predefined filters (as taught by Varma).

The logic includes executing signal decorrelation on the audio signal to flatten the target audio signal while magnifying the disturbance noise. Down sampling of the decorrelated audio signal is then processed. Detection signal logic is used to generate a detection signal through application of an even ordered derivative to the decorrelated and down sampled audio signal. As amended, logic is provided for down sampling the decorrelated audio signal, and the down sampling reducing the even order derivative to less than or equal to a tenth derivative. This is clearly disclosed in the as-filed application in paragraphs [0039, 0040, 0042, and 0057]. No new matter is introduced by this clarifying amendment.

As claimed, the down sampling enables the reduction of the even order derivative, which simplifies the processing of the audio signal. Again, Varma does not teach any of this processing, as Varma is intimately tied to the formation filters, that are a result of training (that happens well in advance of receiving live signals). As such, it is again respectfully submitted that Varma does not render the use of even ordered derivatives of an audio signal obvious, as asserted by the Office on page 3, lines 11-15.

Now, the Office has introduced the teachings of Cezanne, as teaching the execution of signal decorrelation on an audio signal, where the decorrelation acts to reduce an amplitude of the target audio signal, while magnifying the disturbance noise. Although page 3, line 56-page 5 was cited by the Office, these sections do not teach the methods asserted by the Office. As the Office is well aware, Cezanne is concerned with an adjustable noise detection and cancellation process. The adjustability comes from identifying a directivity pattern and declaring a particular noise as a directivity pattern "null". To do this, Cezanne uses back-to-back cardioid sensors. The cardioid sensors produce a heart shape sensing area that is adjustable. In Cezanne's teachings, its algorithm will concentrate on identifying a background and a foreground, where the foreground is where the desired signal is to be captured. The background is where the unwanted signal resides. Cezanne will thus *constrain* that the null be located in a predetermined region of space. Although Cezanne says that some signals can come from the null space, those signals are the result of reflections that find their way into the foreground. A beta factor is then used to adjust the "directivity" pattern of the array.

As such, Varma teaches the use of predefined "learned" filters, and Cezanne teaches directional steering. Varma also does not teach the even order derivative, and the Offices did not contend that Cezanne teaches this feature. Deciding to perform even order derivatives, according to the claimed process is not inherent nor an obvious extension of Varma, as Varma does not disclose the need to compute derivatives in its algorithm. Thus, stating that one looking at the teachings of Varma would render the even order derivative operation of the claims is not logically nor technically correct. However, in an effort to bring more clarity to the claims, the Applicant has further defined the even order derivative feature, which is also not taught suggested by Varma. Consequently, both applied references fail to teach or suggest all elements of the claimed invention.

For the sake of completeness, however, it is submitted that the teachings of Cezanne does not teach what is asserted by the Office. And, the teachings of Cezanne do not supplement or work in the context of Varma. Varma relies on learned filters, and Cezanne cannot use learned filters, as Cezanne relies on actively directing its pattern null away from the desired foreground sources of acoustic energy. One skilled in the art would not combine Varma with Cezanne, as Cezanne's Beta processor 50 would not work. See Page 5, lines 6-16.

For at least the foregoing reasons, the Applicant respectfully submits that the combination of Varma and Cezanne do not teach nor suggestion the claimed invention. Accordingly, the Office is requested to withdraw the Section 103 rejection.

All items being addressed, the Examiner is earnestly requested to issue a Notice of Allowance.

If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 749-6903. If any other fees are due in connection with filing this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No SONYP034).

Respectfully submitted,
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